Light and Lighting

Official Journal of the Illuminating Engineering Society.

Incorporating "The Illuminating Engineer."

32, Victoria St., London, S.W.1.

Edited by J. STEWART DOW

Telephone: ABBey 5215

Vol. XXXVII.—No. 2 **February, 1944** PRICE NINEPENCE Subscription 10/6 per annum, post free

	Page
Editorial Notes ...	15
Notes and News	16
I.E.S. Meetings ...	17
The Place of Science in the Art of Lighting ...	19
The Future of Fluorescent Lighting ...	22
The Editor Replies	24

No Complaints?

THE argument that because no complaints have been lodged therefore everything is satisfactory is a hardy annual—though less hardy than it was.

When people are apparently satisfied with poor lighting it is because they have never thought about it, or because they have never had the drawbacks of the existing conditions pointed out to them, or because they have never seen anything better.

It is a familiar fact that people will endure continuously not merely conditions capable of great improvement but even the complete absence of things which they urgently need—without being aware of it.

The writer can remember days when there was not a tea shop, as we now understand it, in London. There was scarcely anywhere where ladies, up in town for a day's shopping, could get refreshment.

The cup of tea occasionally offered by dressmakers to their clients was regarded as a great concession.

There were no complaints.

New I.E.S. Group in Huddersfield

The continual expansion of I.E.S. activities is well illustrated by the recent formation of another Group, this time in Huddersfield, where Dr. J. Whitaker has been elected chairman and Mr. E. Wood, hon. secretary. This Group has lost no time in getting into its stride, and held its inaugural meeting in the Huddersfield Corporation electricity showrooms on January 28 to hear a lecture by Mr. W. J. Jones, who had come up from London specially for the purpose. Mr. Jones took as his subject the "Trend and Development in Fluorescent Lamps," a fascinating subject well illustrated by demonstrations. Naturally, part of the lecture was devoted to fluorescence, of which many striking instances were shown. The lecturer reviewed the development of low and high pressure mercury lamps and discussed the process of obtaining additional visible light from ultra-violet radiation irradiating fluorescent material. He also illustrated the range of colours available from discharge lamps and suggested the need for a standard scale of colour-values in the future. In conclusion Mr. Jones emphasised the important part to be played by low-pressure mercury lamps in post-war development, especially in the decorative and domestic fields. The lecture led to an interesting question, one interesting point raised by the chairman being the physical dimensions of the lamp of the future. A hearty vote of thanks to Mr. Jones was supplemented by an acknowledgement of the help of Mr. Hands, his assistant, his colleagues in the research laboratories, and the directors of the British Thomson Houston Company, Ltd. There was an audience of over sixty people (nineteen members and forty-four visitors), certainly an encouraging response to a maiden effort.

Yorkshire seems to be more than holding its own in the demonstration of interest in illumination, for, in addition to the other well-established Centres, there is activity in Halifax, where Mr. H. C. Weston has recently delivered an address.

When the Lights Go Up Again

In our last issue we urged the vital need for preparation *now* for the time when normal street lighting is restored. A particularly useful bit of work is now being done by the Association of Public Lighting Engineers, whose secretary, Mr. H. O. Davies, is inviting local authorities to record on a very complete and well-tabulated form the equipment which they would need in order to ensure reinstatement of street lighting systems to pre-war standard. Such information should be of considerable value in enabling the lighting industry to forecast future demands.

Forthcoming I.E.S. Meetings

(Provisional List)

SESSIONAL MEETINGS IN LONDON

1944.

March 14th. Mr. J. B. Carne on **The Lighting of the Homes of Tomorrow.** *(Sessional Meeting to be held in the House of the Royal Society of Arts, John Adam Street, Adelphi, London, W.C.)* **5.30 p.m.**

April 18th. Demonstrations illustrating **Principles of Illumination and Photometry.** *(Joint Meeting with the Science Masters Association, to be held at the Imperial College of Science and Technology, South Kensington, London, S.W.7.)* **5 p.m.**

MEETINGS OF CENTRES AND GROUPS

1944.

March 1st. Address by The President. *(Meeting of the Newcastle Centre, to be held in the Minor Hall, Oxford Street, Newcastle-on-Tyne.)* **5.30 p.m.**

March 6th. Address by The President. *(Meeting of the Bath and Bristol Centre, to be held at the Grand Hotel, Broad Street, Bristol.)* **7 p.m.**

March 6th. Mr. J. S. Preston on **Photoelectric Photometers.** *(Meeting of the Leeds Centre, to be held in the Leeds Corporation Electricity Showrooms, The Headrow, Leeds.)* **5.15 p.m.**

March 6th. Mr. R. Gillespie Williams on **The Poetry of Light.** *(Meeting of the Sheffield Centre, to be held in the Central Library, Tudor Place, Sheffield.)* **6 p.m.**

March 7th. Mr. R. Maxted on **Infra-Red Radiation.** *(Meeting of the Derby Group, to be held in the Derby Electricity Showrooms, Irongate, Derby.)* **6 p.m.**

March 9th. A Paper on **Neon Signs in Post-War Years.** *(Meeting of the Bradford Group, to be held in the Bradford Electricity Department Showrooms, Sunbridge Road, Bradford.)* **6.45 p.m.**

March 16th. Professor Picken on **Ultra-Violet Rays and their Effect on Micro-Organisms.** *(Meeting of the Cardiff Centre, to be held in the Cardiff Corporation Demonstration Theatre, The Hayes, Cardiff.)* **3 p.m.**

1944.

March 9th. Dr. W. J. Wellwood Ferguson on **Visual Functions and Illuminating Engineering.** *(Meeting of the Manchester Centre, to be held in the Reynolds Hall, College of Technology, Sackville Street, Manchester.)* **2.30 p.m.**

March 24th. Mr. A. J. Maddock on **The Thyration and some of its Applications.** *(Meeting of the Birmingham Centre, to be held at the Imperial Hotel, Temple Street, Birmingham.)* **6 p.m.**

March 24th. Mr. A. L. Randall on **Fluorescent Lamps and their Applications.** *(Meeting of the Glasgow Centre, to be held at the "Cadoro" Restaurant, Glasgow.)* **6 p.m.**

March 24th. Dr. S. English on **Light Control of Glassware.** *(Meeting of the Nottingham Centre, to be held in the Lecture Theatre of the City of Nottingham Gas Dept., Parliament Street Nottingham.)* **5.30 p.m.**

April 3rd. Lecture on **The Application of Plastics to Modern Lighting Fittings.** *(Meeting of the Bath and Bristol Centre, to be held in the Pump Rooms, Bath.)* **7 p.m.**

April 3rd. Paper on **Lighting in the Tailoring and Garment Making Industry.** *(Meeting of the Leeds Centre, to be held in the Leeds Corporation Electricity Showrooms, The Headrow, Leeds.)* **5.15 p.m.**

April 3rd. Mr. J. T. Grimshaw on **Post-War Planning of Lighting in Dwellings and Public Buildings.** *(Meeting of the Sheffield Centre, to be held in the Central Library, Tudor Place, Sheffield.)* **6 p.m.**

April 4th. Address by The President. *(Meeting of the Derby Group, to be held in the Borough of Derby Electricity Showrooms, Irongate, Derby.)* **6 p.m.**

April 6th. Annual General Meeting. *(Meeting of the Newcastle Centre, to be held in the Minor Hall, Oxford Street, Newcastle-on-Tyne.)* **5.30 p.m.**

April 13th. Mr. W. Hodgkinson on **Industrial Lighting by Gas.** *(Meeting of the Bradford Group, to be held in the Bradford Electricity Department Showrooms, Sunbridge Road, Bradford.)* **6.45 p.m.**

April 21st. Address by The President. *(Meeting of the Birmingham Centre, to be held at the Imperial Hotel, Temple Street, Birmingham.)* **6 p.m.**

April 28th. Mr. W. R. Stevens on **Applications of Low Pressure Fluorescent Lamps.** *(Meeting of the Nottingham Centre, to be held in the Lecture Theatre of the City of Nottingham Gas Department, Parliament Street, Nottingham.)* **5.30 p.m.**

Secretaries of Centres and Groups are requested to send in, as soon as available, particulars of any modifications in or additions to the revised List of Meetings for the Session as reprinted, in revised form, from the Transactions (December, 1943).

I.E.S. Birmingham Centre

Recent Activities

We have received from Mr. W. J. P. Watson some interesting particulars of the growth of the above I.E.S. Centre, which now claims a total membership of nearly 200, including nineteen sustaining members, the latest recruit in this class being Messrs. Joseph Lucas, Ltd., a very well known Birmingham firm. We notice that at their recent meeting on January 28 an address reviewing the Control of Light from the earliest days up to the present time was given by Mr. J. Ashmore, who presented two bound copies of his paper to the library. Arrangements have been made for a special address on Modern Factory Lighting to be given to Midland factory inspectors on March 21 by Mr. H. Lingard (Chief Factory Lighting Officer of the Ministry of Supply).

The Second Annual Essay Competition arranged by the Centre has resulted in a total of fifteen excellent essays being received from students attending technical schools in the Midland Area, the title of the essay on this occasion being, "My Views on Artificial Lighting." The judges, who had no easy task in arriving at their decisions, finally awarded the first prize to K. M. Poole, of Old Hill, Staffs, and the second prize to J. R. Dyson, of Rugby, Warwickshire. A number of consolation prizes are also to be awarded in view of the meritorious essays submitted. It has been arranged for the prize giving to take place on April 21, when the president, Dr. H. Buckley, will be giving his presidential address to the Centre and will be invited to present the prizes.

Lighting in Relation to Town and Country Planning

"Planning" is very much in the air at present, and it is well that ideas in regard to post-war lighting should be harnessed to other more general efforts. In this connection we are reminded of an address on the above subject delivered in Newcastle by Mr. J. H. Napper some months ago—one of those stimulating, broad, and general addresses of which the North-Eastern Centre seems to make rather a speciality. Mr. Napper, an architect, began by pointing out the radical change in conditions since the period before the nineteenth century—when water in general was derived only from streams and wells, lighting was by candles, and there was none of the many services and amenities which exist to-day. At that time a man could not have earned a living as a specialist; but with the enormous expansion of recent years engineering has become rapidly subdivided and there are openings for them.

Mr. Napper recalled that the year in which the Illuminating Engineering Society was founded was also that in which the Code for Building and Steel was enforced and the first Town Planning Act was passed. Lighting will take its place in future plans in the sphere of building to promote healthier and happier conditions and greater safety on our roads and streets. Illuminating engineers should be alert to see that a place is found for lighting when other amenities are considered, and it will be easier for them to do so if they will take an interest in the general plans for the welfare of the community of which it forms a part.

The Place of Science in the Art of Lighting

Discussion at the Joint Meeting of the Illuminating Engineering Society and the Royal Institute of British Architects, held on January 18, 1944.

At the joint meeting of the I.E.S. and the R.I.B.A., held in the R.I.B.A. building on January 18, the available space was filled to capacity. This was not the first occasion on which the I.E.S. had met on this spot—there was, before the war, a successful gathering of the I.E.S. Decorative Lighting Section, which was addressed by leading architects—but it was probably the first time that both bodies had formally combined in a joint meeting.

The presidents of both bodies, Dr. H. Buckley and Mr. Percy Thomas, were on the platform, and the latter presided. Introductory addresses illustrated by lantern slides and demonstrations, were given by Mr. R. O. Ackerley (past president, I.E.S.) and by Mr. Allister MacDonald, F.R.I.B.A. (chairman of the Architectural Board of the R.I.B.A.). The audience thoroughly enjoyed these talks, which were developed on novel lines, the speakers commenting in turn on each other's remarks and on the various experiments performed.

Recent Advances in Lighting.

In a foreword, summarising these introductory addresses, attention was drawn to the great advances in building science, which since the beginning of this century, have complicated the work of the architect, who should regard science as a tool which he must learn to use to the best advantage. The problem is to recognise where science comes in. Without good lighting a building can be neither effectively used nor effectively seen—two of the primary aims of any creative architectural work. Such good lighting can only be achieved by a proper use and understanding of science and a full knowledge of recent progress. In the days of candles and oil lamps there were no light sources which gave out sufficient light to make a serious study of light control worth while; high illumination values were, for all practical purposes, unobtainable, and none of the lights in use were glare sources in the sense that the modern high brightness sources are.

The Complexity of Lighting Problems.

To-day we have to study such problems as the desirable illumination values; the selection of lighting fittings as regards efficiency, light distribution, candle power, etc., so as to give the desired illumination in any given situation; the problem of light control involved in ensuring reasonable evenness of illumination without excessive contrast or glare; the provision of the necessary space, etc., how to house light controlling equipment, and the recognition of the fact that the extent to which light can be controlled is largely bound up with the amount of such space; the interaction between lighting and objects lit; the effect of texture, finish, colour, etc.; the characteristics of typical light transmitting and reflecting media, the effect of spacing, offsets, etc.; and last but not least the problems involved in obtaining any desired result with the least expenditure of energy.

Striking a Balance.

Once it is realised that science can contribute materially to the art of lighting we are half-way towards finding the

right place for it. But before we can go the whole way we have to recognise that the interests of art and science may sometimes appear to conflict. In such cases something will have to be sacrificed by science to art, or by art to science, and it is only by an appreciation of all factors that the architect, who must be the arbiter, can judge how far to give way on one side or the other

The problem in almost every case becomes one of *striking the correct balance.*

Co-operation at an Early Stage.

The solution lies in proper co-operation right at the beginning of the architect's sketch plans, and at every stage between the architect and the lighting engineer, but such co-operation is only possible if they are able to talk the same language. The lighting engineer should learn and try to look through the architect's eyes. Because uncontrolled or badly controlled light sources lead to patchy illumination, excessive contrast, glare, distortion of shape and colours, and waste of light, the young lighting engineer spends much of his time learning how to spread light evenly, how to avoid glare and pronounced shadow, how to render shapes and colours exactly as they are, and how to do all these things with the least expenditure of energy. He gets almost a fetish for even illumination, for cutting out high-lights and shadows, for correct rendering of shapes and for efficiency. He does not realise that to the ordinary human eye even illumination may be monotonous, and the architect is the interpreter of these human values in his design. Deep shadows and high contrast may be more pleasing or may be used to add an air of intensity; sparkle and glitter may be stimulating, and distortion of shape or colour may be deliberate in order to create some desirable emphasis. Efficiency, too, may be very desirable, but must not be allowed to destroy effect.

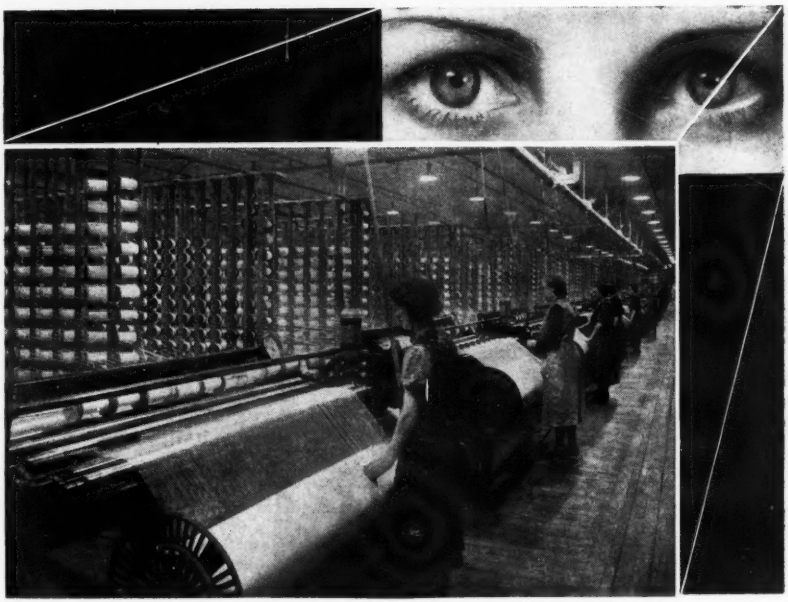
If the architect and lighting engineer can each learn something of the other's point of view and can appreciate the effect of this difference of background, the one subjective the other objective, it should be possible to give science its right place in the art of lighting.

Experiments and Demonstrations.

At the meeting these ideas were illustrated by references to many practical problems. Mr. Ackerley showed a series of demonstrations, some familiar to I.E.S. members, but none the less effective. He showed for example, how the direction from which the light comes may alter entirely the appearance of carving, and how a combination of directional and diffused lighting may be desirable in order to get the best effect; how the appearance of velvet may be completely changed by the direction of the light; how the problem of avoiding "spotty" effects on opal or frosted glass illuminated behind is complicated by the number and positions of lamps, their distance away, and internal reflection. Another exhibit consisted of two squares filled by polished spheres, in one case clearly evident as such, in another indistinguishable owing to their minute size, though otherwise identical. Mr. MacDonald had a number of pleasing slides showing the effect of lighting on the appearance of interiors and exteriors of buildings, pointing out effects to which the architect would attach considerable importance, but which might well be overlooked by the lighting expert.

One of the most amusing items was a discussion between Mr. Ackerley and Mr. MacDonald in regard to the correct method of lighting a frieze by means of lamps concealed behind a cornice, various alternatives being proposed and rejected and the best method of lighting ultimately evolved by consultation.

BLUE PRINT FOR SEEING. Use the correct Crompton Lamp, enlist the help of the Crompton Lighting Service; thus will you make sure of maximum visual efficiency.



CROMPTON LAMPS

FOR **CORRECT** LIGHTING

TUNGSTEN . . . FLUORESCENT . . . DISCHARGE . . .

CROMPTON PARKINSON LTD · ELECTRA HOUSE, LONDON W.C.1

Telephone: Temple Bar 5911 *Telegrams: Crompark Estrand, London*

The Future of Fluorescent Lighting

At a meeting of the Association of Supervising Electrical Engineers at the E.L.M.A. Lighting Service Bureau on January 8, Mr. W. J. Jones outlined the future possibilities of lighting by the fluorescent lamps.

At present practically all fluorescent lighting equipment is being devoted to industrial installations. In the future, however, Mr. Jones said, fluorescent lighting would sweep the board because its overall economy, shape and low brightness, and other advantages, such as reduced heating effect, lend themselves ideally to its incorporation in built-in lighting schemes with artistic as well as utilitarian merit. In due course, after the war, fluorescent tubes in different sizes and probably different colours from the 80-watt 5-ft. tube would doubtless be available.

Illumination Design

Investigation and research have shown that, in spite of their elongated shape, trough-shaped industrial reflectors for fluorescent lamps mounted at the heights usually employed for general lighting have an efficiency and a distribution very similar to those of standard dispersive industrial reflectors for gas-filled lamps. It therefore becomes possible to apply the appropriate coefficient of utilisation and spacing ratio and to make use of the well-known Lumen method of design. As an example, he quoted the coefficient of utilisation for a room 20 ft. by 20 ft. With fittings mounted 7 ft. above the plane of work, with very light ceiling and light walls, this would be 0.54 in the case of single-lamp fittings, which, if spaced 10 ft. apart, would give a service illumination of about 9 ft.c. Two-lamp fittings correctly designed would give about 16 ft.c. and three-lamp fittings about 23 ft.c., the slight reduction in efficiency with multi-lamp fittings being unavoidable if the anti-glare properties of the fitting are to be retained and if reasonable compactness is required.

Increased Comfort

Mr. Jones stated that continuous parallel lines of fluorescent lamps spaced 1 ft. apart at ceiling level would give 275-375 ft.c. of illumination in an ordinary room, depending on its dimensions and decorations, and that comfort was increased by illumination of this order. That was undoubtedly true—but with incandescent lamps it was not generally true after a level of about 50 ft.c. is passed.

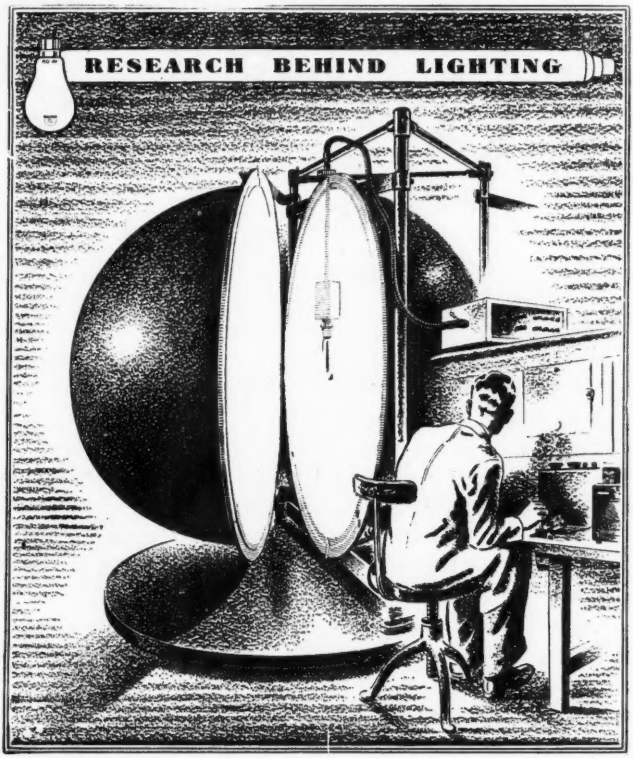
Lighting, an Art and a Science

Lighting, the lecturer proceeded, is both an art and a science. It is already possible for a lighting engineer to provide in his lighting scheme the contrasts shown on an architect's wash drawing, and if the result is not then satisfactory it will be the architect who is to blame for not examining the scheme in its initial stages under the correct illumination level. For some years now there has been a growing realisation that light is not merely a utility enabling normal life to be continued after dark, but is something which can be used to increase the pleasure, the health, or the profit of all. Lighting engineers have sometimes been criticised by artists and architects for judging a lighting scheme in terms of foot-candles, rather as a picture might be assessed by the quality of paint used. True, the ultimate success of a lighting installation is based on an appeal to the eye—an appeal which cannot be measured—but calculations of foot-candles and brightness are necessary steps in producing that appeal. Engineering is often a compromise between the theoretical and the practical, and because this is true of lighting matters as of others we must learn to temper the results obtained in a laboratory with experience in the field.

Lighting Units an Integral Part of the Structure

"I hope and believe," Mr. Jones concluded, "that the day will come when artificial light will cease to be a cobweb-catching device hanging from the ceiling, but will become part of the structure, originally provided as a matter of course by the architect or builder in the same way as he now makes provision for the drains, leaving the occupier to provide touches of colour or decoration by supplementary lighting, as part of his furnishings.

"The future of lighting is dependent on the team work of the electrical industry as a whole. The electric lamp interests can and will produce more efficient light sources; the fittings makers will design new and better fittings; but in each instance the progress made will depend upon the facilities provided for their use. It is important to have one standard size of plug, one standard voltage throughout the country, and a greater measure of uniformity in methods of charging for electricity."



INTEGRATING PHOTOMETER

MADE and used in the BTH Research Laboratories at Rugby, this remarkable precision instrument, opening in two halves measuring 6ft. in diameter, is the largest of its type.

It enables a single measurement to determine *precisely* the light output and luminous efficiency of any electric lamp; it is just one of many scientific devices employed in the BTH Laboratories in their unremitting effort to maintain and improve the quality of Mazda Lamps.

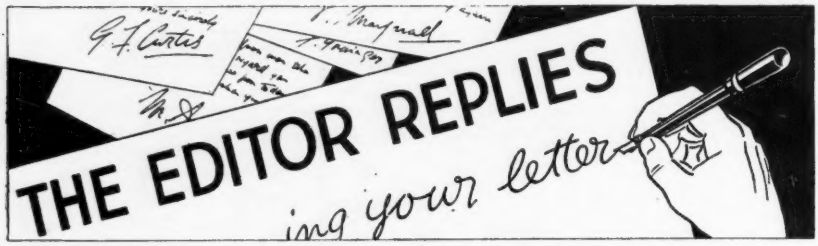
BTH RESEARCH AIDS INDUSTRY

BTH Research Laboratories have made an intensive study of both the physical and psychological aspects of lighting in wartime industry and their knowledge and experience are at the disposal of the principals of industrial undertakings through the Mazda Lighting Advisory Service.

MAZDA LAMPS

LIGHTING ADVISORY SERVICE

The British Thomson-Houston Co. Ltd., Crown House, Aldwych, London, W.C.2. M4006



Mr. Hime's contribution on the **lighting of welding shops** (January, 1944, p. 4) has brought me several comments; for example, from Mr. J. H. Nelson, who refers to the value of **light surroundings** as a measure of safety ("Illuminating Engineering," January, 1943), which is related to their merit of rendering glare or "flashes" less evident. The application of this principle in factories is somewhat limited by the difficulty of maintaining such surfaces in clean condition. Mr. Nelson suggests that, until one can find a wall finish that will stand almost any maltreatment, the use of light colours must be confined to parts of the building which are more than 4½ ft. above floor level!

I am not sure, however, that this is so great a drawback as appears. **In schools,** for example, it is usual to adopt light finishes for the upper parts of rooms, but **medium finishes** for the areas **below eye-level.** This practice is designed not only to render discoloration less evident, but in part also because a very light background at this low level is not really desirable, a **medium background** giving rise to a brightness less than that of objects on desk or table and yet not so low as to create excessive contrast being preferable.

This question of diminishing the effect of "flashes" in welding shops is also interesting as an illustration of the fact that the **requisite illumination** in any special circumstances is rarely determined only by its value in enabling a task to be accomplished. There are **almost always other factors**—sometimes intangible, as when psychological impressions are involved, but sometimes quite clear cut, as in this special case.

A similar "special factor" operates in **glass works, foundries, and forges,** where workers were traditionally loath to welcome moderate illuminations, though admittedly needed in the interests of visibility. Amongst other objections it has been urged that unless the illumination is weak the changes in hue of molten material cannot be properly observed, and that the **danger of accidentally handling hot material** (with the glow no longer in evidence) is increased.

These are objections that should be fairly met. I have the impression, however, that they are in part due to prejudice. When once reasonably good lighting of the right quality is introduced, workers *do* find that they can ply

WHEN THE PRIME MINISTER says

SWITCH ON!

Revo

STREET LIGHTING EQUIPMENT

will come into its own again

IN hundreds of Cities and Towns throughout the country Revo Street Lighting Equipment will be there to restore one of the most desired comforts of peace. Others will urgently require new installations. Be ready. **PLAN NOW** for post-war street lighting and ask our Illuminating Engineers for their assistance. There is no obligation.

REVO ELECTRIC Co. Ltd. TIPTON, Staffs.

G17

their craft better than before, and welcome the change. As regards the danger of burns from handling hot iron, etc., it must be recognised that an object may be too hot to touch long after it has ceased to emit any visible glow. In such circumstances illumination cannot increase the danger. The best safeguard is perhaps to coat such object with one of the recognised special paints which change colour under the influence of temperature.

There are many special circumstances which affect the degree of illumination necessary for carrying out a task—for example, the effect of **motion of objects,** as exemplified in some industrial processes (lathe work, travelling belts, etc.), and especially in ball games. Movement may actually become indistinguishable at low illuminations. I doubt whether the effect of increasing illumination on the ability to "fix" a rapidly travelling object has yet been fully assessed.

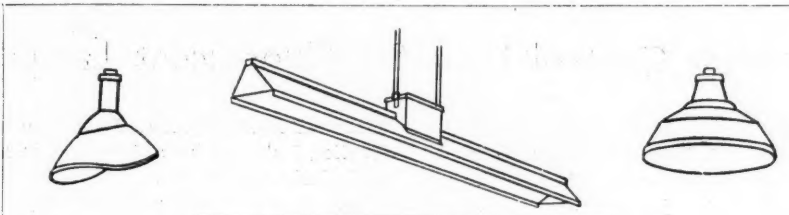
There is also the perennial question, the effect of light on the ease of performing any process. When a maximum as regards output, accuracy, and speed of operations has been reached, higher or better applied illumination may still affect **the ease with which this effort is maintained**—and of this subjective impression of "ease" we have no measure.

Reverting to **fluorescent lamps,** I have also to thank Mr. Nelson for the information that good results have been obtained with the Dufay colour films, using these lamps and ordinary daylight filters, which suggests that the colour-rendering qualities must at least be fairly good.

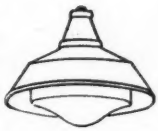
I have had brought to my notice several of those rather surprising cases in which people believe they have suffered eye trouble as the result of long continued use of fluorescent lamps, in spite of their evident advantages as regards colour, diffusion, and low brightness.

In some cases trouble may perhaps arise **if these good qualities are abused.** Although the brightness is low the candle-power is considerable. It is inexpedient, therefore, to expose these lamps at close range and in the direct range of vision—on the assumption that they cannot cause glare however they are used. The actual **cyclical variation in candle-power** on a.c. is less than in the case of ordinary discharge lamps owing to the existence of some phosphorescence, and I should be inclined to doubt whether this rhythmic variation could have any appreciable ill effect. I gather, however, that the operation of the lamps is liable to be somewhat affected if intermittent heavy loading (e.g., from electrical machinery) is imposed on the circuit, causing fluctuations in voltage. In certain cases this might conceivably give rise to irritating flickering of the light.

These are possibilities which deserve investigation. Such complaints are, however, rare in comparison with the very large numbers of operators who habitually work by the light of these lamps and profess to be completely satisfied.



Regd Trade Mark.
EFESCA
FACTORY and COMMERCIAL LIGHTING UNITS



FALK, STADELMANN & COMPANY, LIMITED
89-93, FARRINGDON ROAD, LONDON, E.C.1 and BRANCHES

89-19c

Immediate or Post-War Position Desired

FELLOW, CHARTERED ELECTRICAL ENGINEER (37), well-known Lighting Engineer of proved administrative and technical ability, desires post where full use can be made of his capabilities. Not at present connected with large firm.—Apply to Box No. 120, "Light and Lighting," 32, Victoria-st., London, S.W.1.

Association for Scientific Photography

Meetings devoted to Micro-Densitometry and Micro-Sensitometry have already been held this year. Mass Radiography is being dealt with on February 26. The subsequent meeting, on March 25, will be at Caxton Hall, Westminster (2.30 p.m.), and is to be devoted to the Assessment of Lens Performance; papers will be read by Mr. A. Cox and Mr. H. W. Martin.

LIGHTING UNDER POST-WAR CONDITIONS

will be even better and brighter and more comfortable than in the years before the war. Vitreosil, pure fused silica, gave to pre-war developments its remarkably heat resistant and light diffusing gas globes and the highly transparent envelopes of the super-pressure mercury lamps.

When the present job is finished we can contribute our added war-time experience in the production of this remarkable material.

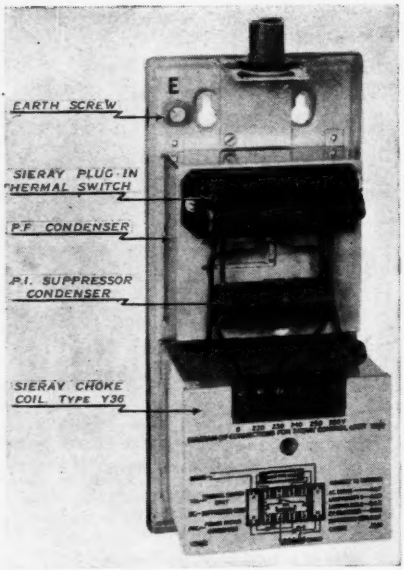
Write to
THE THERMAL SYNDICATE LTD.
SOLE DISTRIBUTORS
Head Office: Wallsend, Northumberland.
London Depot: 12-14, Old Pye Street, Westminster, S.W.1.

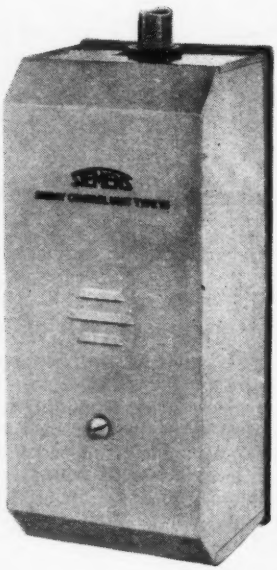
A New Control Unit for Fluorescent Lamps

The choice of a suitable control unit for use with fluorescent lamps is a matter of some importance. We have here a factor that did not arise with incandescent lighting. In addition to the accessories associated with the working of the lamp there is the important consideration of power factor control—a question which, as Mr. F. Baker has recently shown, may have a very material effect on the operating cost of a fluorescent lighting installation.*

New forms of self-contained apparatus are therefore welcome. The Sieray Control Unit now being introduced by Messrs. Siemens Electric Lamps and Supplies, Ltd., and here illustrated, is a particularly neat device.

The figures are self-explanatory Everything necessary to control the operation of an 80 W fluorescent tubular lamp and to rectify the power factor of the circuit is provided. The choke coil, thermal switch, and condensers are enclosed and protected by a sheet metal cover, secured by a single-fixing stud. The complete unit measures 10¼ in. x 4⅝ in. x 3⅞ in. high, and is suitable either for wall mounting or for fixing on the top of a reflector. The unit is supplied with all internal wiring completed, and the installation is of the simplest character.





* LIGHT AND LIGHTING, Oct., 1943, p. 162.